METHODS TITLE:

NEW RECEPTOR AND RELATED PRODUCTS A. INVENTORS NAME: Byoung S. Kwon SERIAL NO.: 08/955,572

1/6

ATGTCCATGA ACTGCTGAGT GGATAAACAG CACGGGATAT CTCTGTCTAA AGGAATATA CTACACCAGG AAAAGGACAC ATTGGACAAT TCGCC ATG GGA AAC AAC TGT TAC AAC GTG GTG GTC ATT GTG CTG CTG ATG GGA AAC AAC TGT TAC AAC GTG GTG GTC ATT GTG CTG CTG ATG GGC TGT GAG AAG GTG GGA GCC GTG CAG AAC TCC TGT GAT AAC ACTGT GAG AAC GTG GTG GAG AAC TCC TGT GAT AAC ACTGT GAG AAG GTG GAG ACC GTG CAG AAC TCC TGT GAA AAC ACTGT GAG AAC TTC TC TGC AGA AAA TAC AAT CA GTC TGC AAG CTG CCT GGT ACT TTC TGC AGA AAA TAC AAT CA GTC TGC AAG CTG GC TGT GAG AAC TCC TCC AGA AAA TAC AAT CA GTC TGC AAG CTG CCT CCA AGT ACC TCC AGA AAA TAC AAT CA GTC TGC AAG CTG CCT CCA AGT ACC TCC AGA AAA TAC AAT CA GTC TGC AAG CTG CCT CCA AGT ACC TCC AGA AAA TAC AAT CA GTC TGC AAG CTG CCT CCA AGT ACC TCC AGA AAA TAC AAT CA GTC TGC AAG CTG CCT CCA AGT ACC TCC AGA AAA TAC AAT CA GTC TGC AAG CTG CTG CCT CCA AGT ACC TCC AGC GTC TGC AAC ACC TGC CTC CCA AGT ACC TCC AGC GTC TGC AAC ACC TGC CTC CCA AGT ACC TCC AGC GTC TGC AAC ACC TGC AGA GTG TGT GCA GGC TAT TTC AGG TCC AAC ACC TGC AGA GTG TGT GCA GGC TAT TTC AGG TCC AAC ACC TGC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GAA CTG TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GAC ATC TGC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GAC ATT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GAC ATT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GAC ATG TGC TGT GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC ATT TCC ATT GC TG GGG CCA CAG TGC ACC AGA TGT GAA AAC GAC TGC ATT TCC ATT GC TG GGG CCA CAG TGC ACC AGA TGT GAA AAC C TGT AGC ATG TTC ATT AAT GAC CAG AAC GGT ACC AGA TGT GAA AAC C TGT AGC ATG TTC TTC TA AGG AGC GGA GGT TGC AAA ACC TGT AGC ATG TTC TTC TA AGG AGC GGA AGC TGC TGT GCA CCC ATT TTC TGT AAT AAT GAC CAG AAC GGT ACC TGT GGC CTC TGT CGA ACC ACG GAG AAC TTT AAT GAC CAG GAA AGC TCC TGT GGC CTC TGT GGA ACC ACG GAG AAC TTT AAT GAC CAG GAA AGC TCC CTC GTG GTG ACC TTC TTC TCC ACT ACC ACC ATT TCT GTG GAC CCC CTT GTG GGA GGA CCA TCC TTT AAT AAC ACC ACC ATT TCT GTG GAC CCC CTT GTG GGA GGA CCA TCC TTT TTT TTT TTT TTT TTT TTT TTT TTT									., _						(Ş)	
ATG GGA AAC ACC TGT TAC ACC GTG GTG GTG GTC ATT GTGC CTG CTA Met Gly Asn Asn Cys Tyr Asn Val Val Val Ile Val Leu Leu Leu TGT GGC TGT GAG AAG GTG GGA GCC GTG CAG AAC CTG GTG GTG GTG GTG GTG GTG GTG GTG GT	ATGTC	CATO	A A	.CTGC	TGAG	ST GO	ATA	AACA	G CAC	CGGG	TATA	CTC	rgrc:	ГAA	4 2	-96
ATG GGA AAC AAC TGT TAC AAC GTG GTG GTC ATT GTG CTG CTA AGS Met Gly Asn Asn Cys Tyr Asn Val Val Val Ile Val Leu Leu Leu Leu CTG GTG GGC GGC GGC GGC GGC GGC GGC GGC	AGGAA'	TAT.	'A C	TAC	CCA	G AA	AAAG	SACA	CAT	CGA	CAAC	AGG	AAAG	GAG	يد. د د	-46
GTG GGC TGT GAG AAG GTG GGA GCC GTG CAG AAC TCC TGT GAT AAC VAI GLY VAI GLY VAI GLY VAI GAT VAI GLY VAI GAT AAC VAI GLY CYS GLU LYS VAI GLY ALS VAI GLY ALS VAI GLY ALS VAI GLY CYS ASP ASN TGT CAG CCT GGT ACT TTC TGC AGA AAA TAC AAT CCA GTC TGC AAG CYS GLN Pro GLY Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys Lys	CCTGT	CACA	G A	AAAC	CACA	G TO	STCCI	GTGC	CATO	STGAC	CATT	TCG	CC		کر ^{ند} خ. افغ رو	, - 1
GTG GGC TGT GAG AAG GTG GGA GCC GTG CAG AAC TCC TGT GAT AAC VAI Gly Cys Glu Lys Val Gly Ala Val Gln Asn Ser Cys Asp Asn TGT CAG CCT GGT ACT TTC TGC AGA AAA TAC AAT CCA GTC TGC AAG Cys Gln Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys Lys H4-1BB FII AGC TGC CCT CCA AGT ACC TTC TCC AGC ATA GGT GGA CAG CCG AAC Ser Cys Asn Ile Cys Arg Lys Tyr Asn Pro Val Cys Lys Lys H4-1BB FII TGT AAC ATC TGC AGA GTG TGT GGA GGC TAT TTC AGG TTC AAG AAG Cys Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Lys TTT TGC TCC TCT ACC CAC AAC GGG AAC GGA TAT GAG TGC AAG AAG GCYs Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAA GAG GAC TGC TAT TGC TCT TTC TCT ACC CAC AAC GCG GAG TGT GAA AAC GAC GAC TGC ASn Ala Glu Cys Glu Cys Ile Glu Gly TTC AAG AGG TGC ATT TGC TCC TTC GGA GAC CAG TGC AGA TGT GAA AAC GCG AAC CAG TGC AGA TGC TGC AGA AAC TGC TGC TGC TGC TGC TGC TGC TGC TGC TG																(1274)
GTG GGC TGT GAG AAG GTG GGA GCC GTG CAG AAC TCC TGT GAT AAC VAI Gly Cys Glu Lys Val Gly Ala Val Gln Asn Ser Cys Asp Asn TGT CAG CCT GGT ACT TTC TGC AGA AAA TAC AAT CCA GTC TGC AAG Cys Gln Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys Lys H4-1BB FII AGC TGC CCT CCA AGT ACC TTC TCC AGC ATA GGT GGA CAG CCG AAC Ser Cys Asn Ile Cys Arg Lys Tyr Asn Pro Val Cys Lys Lys H4-1BB FII TGT AAC ATC TGC AGA GTG TGT GGA GGC TAT TTC AGG TTC AAG AAG Cys Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Lys TTT TGC TCC TCT ACC CAC AAC GGG AAC GGA TAT GAG TGC AAG AAG GCYs Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAA GAG GAC TGC TAT TGC TCT TTC TCT ACC CAC AAC GCG GAG TGT GAA AAC GAC GAC TGC ASn Ala Glu Cys Glu Cys Ile Glu Gly TTC AAG AGG TGC ATT TGC TCC TTC GGA GAC CAG TGC AGA TGT GAA AAC GCG AAC CAG TGC AGA TGC TGC AGA AAC TGC TGC TGC TGC TGC TGC TGC TGC TGC TG															CTA	45
Val Gly Cys Glu Lys Val Gly Ala Val Gln Asn Ser Cys Asp Asn TGT CAG CCT GGT ACT TTC TGC AGA AAA TAC AAT CCA GTC TGC AAG CYs Gln Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys H4-1BB FI AGC TGC CCT CCA AGT ACT TTC TCC AGC ATA GGT GGA CAG CCG AAC Ser Cys Pro Pro Ser Thr Phe Ser Ser Ile Gly Gly Gln Pro Asn H4-1BB FII TGT AAC ATC TGC AGA GTG TGT GCA GGC TAT TTC AGG TTC AAG AAG CYs Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Cys Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Lys Cys Asn Ile Cys Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTT TGC TCC TCT ACC CAC AAC GGG GAG TGT GAG TGC ATT GAA GGA CYS Asn Ala Glu Cys Glu Cys Ile Glu Gly TTT TGC TCC TCT ACC CAC AAC CAG TGC ACC AGA TGT GAA AAG GAC TGC ASN Ala Glu Cys Glu Cys Ile Glu Gly TTT TGC TCC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC ASN Ala Glu Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAC CAG TGC ACC AGA TGT GAA AAG GAC TGC AAG ARG Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser H4-1BB RI TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GC CTC TGT CGA CCC ACG ACC ACG ACC ACG ACC ACG ACC ACG ACC ACC	Met G	TY A	lsn	Asn	Cys	Tyr	Asn	val	Val	Val	TTE	Val	Leu	Leu	Leu	
Val Gly Cys Glu Lys Val Gly Ala Val Gln Asn Ser Cys Asp Asn TGT CAG CCT GGT ACT TTC TGC AGA AAA TAC AAT CCA GTC TGC AAG CYs Gln Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys H4-1BB FI AGC TGC CCT CCA AGT ACT TTC TCC AGC ATA GGT GGA CAG CCG AAC Ser Cys Pro Pro Ser Thr Phe Ser Ser Ile Gly Gly Gln Pro Asn H4-1BB FII TGT AAC ATC TGC AGA GTG TGT GCA GGC TAT TTC AGG TTC AAG AAG CYs Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Cys Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Lys Cys Asn Ile Cys Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTT TGC TCC TCT ACC CAC AAC CAG AAC GGG GAG TGT GAG TGC ATT GAA GAG GAC TGC AS ASN Ala Glu Cys Glu Cys Ile Glu Gly TTT TGC TCC TCT ACC CAC AAC CAG TGC ACC AGA TGT GAA AAG GAC TGC AS ASN Ala Glu Cys Glu Cys Ile Glu Gly TTT TGC TCC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC AST ASN Ala Glu Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG TGT GAA AAG GAC TGC AST ACG AAG CAG AAG CAG GGT TGC AAA ACC TGT AGC AAG AAG GAT THO Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAC GGT ACT GGC CTC TGT CGA CCC ATG AAG AAG GAC TTC AAG ACC ATG AAG AAC GGT ACT CYs Arg Pro H4-1BB RII TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GTG CTT AAG ACC GGG ACC AGG AAG TTC AAG ACC GGG ACC CC CT GTG CTC TAAG ACC GGG ACC ACC ATT TCT GTG GAG CCC CT GTG GTG AGC TTC AAG ACC GGG ACC ACC ATT TCT GTG GAG CCC CT GTG GTG ACC ACC ACC ATT TCT GTG GAG CCC CT GTG GTG ACC ACC ATT TCT GTG GAG CCC CT GTG GTG ACA TCC ACC ATT TCT GTG GAG CCC CTT GCC GGG CTG ACA TCC GGG CAC CCC TTG CCT GTG CCT TTC CTG GCG CTG ACA TCC GGG CTG ACC	כיייר כי	CC T	т	C Λ C	א א כ	CTC	CCA	CCC	CTC	$C \Lambda C$	7 7 C	TICC	ጥርጥ	$C \lambda T$	7 7 C	0.0
TGT CAG CCT GGT ACT TTC TGC AGA AAA TAC AAT CCA GTC TGC AAG CCC GIC TGC CAG GIC TGC AGG CCC AGG CCC AGG CCC AGG AGG CCG AAG CCC AGG AGC AGG CCC AGG AGC AGC																90
Cys Gln Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys AGC TGC CCT CCA AGT ACC TTC TCC ACA ACG CGG AAC CGG AAC CGG AAC CGG AAC GGG TTC TTC AGC ATC GGG CAG AAC CGG AAC ATC GGG CAG AAG AAG AAG AGG TTC AAG	vai G	TY C	, y 3	Gra	шуз	vai	GIY	AIG	vai	GIII	ASII	Ser	Суз	лэр	ASII	
Cys Gln Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys AGC TGC CCT CCA AGT ACC TTC TCC ACA ACG CGG AAC CGG AAC CGG AAC CGG AAC GGG TTC TTC AGC ATC GGG CAG AAC CGG AAC ATC GGG CAG AAG AAG AAG AGG TTC AAG													•			
AGC TGC CCT CCA AGT ACC TTC TC AGC AGC ATA GGT GGA CAG CCG AAC CYS Pro Pro Ser Thr Phe Ser Ser Ile Gly Gly Gly Gln Pro Asn TGT AAC ATC TGC AGA GTG TGT GGA GGC TAT TTC AGG TTC AAG AAG CYS Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GGA GGA CYS Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC ATT GAG TGC AAC GAG TGC AGG TGC ATT GAA AAG GAC TGC AAG AAG CYS Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGT AAA AAC GAC TGC AAA ACC TGT AGC AAT GAA GAG CCT GAA GAG TGC AAT CAC AAA ACC TGT AGC AAT GAA GAG CCT GAA AAG CAG GAT TGC AAA ACC TGT AGC AAT GAA GAG CAC AAT GAA AAC TGT AGC AAT GAA AAC TGT AAC AAT GAC CAG AAC GAT TA AAC AAC AAC AAC AAC AAC AAC AAC AA	TGT C	AG C	CT	GGT	ACT	TTC	TGC	AGA	AAA	TAC	AAT	CCA	GTC	TGC	AAG	135
AGC TGC CCT CCA AGT ACC TTC TC AGC AGC ATA GGT GGA CAG CCG AAC CYS Pro Pro Ser Thr Phe Ser Ser Ile Gly Gly Gly Gln Pro Asn TGT AAC ATC TGC AGA GTG TGT GGA GGC TAT TTC AGG TTC AAG AAG CYS Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GGA GGA CYS Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC ATT GAG TGC AAC GAG TGC AGG TGC ATT GAA AAG GAC TGC AAG AAG CYS Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGT AAA AAC GAC TGC AAA ACC TGT AGC AAT GAA GAG CCT GAA GAG TGC AAT CAC AAA ACC TGT AGC AAT GAA GAG CCT GAA AAG CAG GAT TGC AAA ACC TGT AGC AAT GAA GAG CAC AAT GAA AAC TGT AGC AAT GAA AAC TGT AAC AAT GAC CAG AAC GAT TA AAC AAC AAC AAC AAC AAC AAC AAC AA	Cys G	ln P	ro	Gly	Thr	Phe	Cys	Arg	Lys	Tyr	Asņ	Pro	Val	Cys	Lys	
Ser Cys Pro Pro Ser Thr Phe Ser Ser The Gly Gly Gly Pro Ash	•			_			•	H4-	-1BB	FĨ	>			-	-	
Ser Cys Pro Pro Ser Thr Phe Ser Ser The Gly Gly Gly Pro Ash																
TGT AAC ATC TGC AGA GTG TGT GCA GGC TAT TTC AGG TTC AAG AAG CYS Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GGA CYS Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC ATC GLU Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC AGA AGG Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser H4-1BB RI TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG TTG THR Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAC GTC TCT CTA GAC GGA ACC CCT GTG GTG AGC TTC TTC CCC AGT ACC ATT TCT TTC CTG GAG GGA GGA CCA GGA GGA CCC CTG ACA TCG Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TCC CTG CTG ACA TCG GGG CTC TTG CTG CTG CTG ACA TCG GGG CTC TTG CTG CTG CTG CTG ACC TTG CTG CTG CTG CTG CTG CTG CTG CTG C																180
TGT AAC ATC TGC AGA GTG TGT GCA GGC TAT TTC AGG TTC AAG AAG CYS ASN Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GGA GGA CYS Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC AAG GAC TGC Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-IBB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG TT TGT CAC CCC ACC ACC ACC ACC ACC ACC ACC AC	Ser C	ys P	ro	Pro	Ser	Thr	<u>Phe</u>	Ser				Gly	Gln	Pro	Asn	
Cys Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GGA Phe Cys Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-IBB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GIY His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG GAG AGG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT CTG GGA GAG AGG ACC CTG ATC TTC ATT ACT CTC CTG TTC TCT CTG GGA GAG AGG CTC CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT CTG GGA GAG CTC TCC TTG CTG CTG CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT CTG GGA		•							H4-	-1BB	FII					
Cys Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GGA Phe Cys Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-IBB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GIY His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG GAG AGG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GAG CAC TCC CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT CTG GGA GAG AGG ACC CTG ATC TTC ATT ACT CTC CTG TTC TCT CTG GGA GAG AGG CTC CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT CTG GGA GAG CTC TCC TTG CTG CTG CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT CTG GGA	mcm a:	3 C 3	то	mco.	7 (7	CITIC	m c m	C C 7	CCC	mam	ттс	7.00	mmc	770	7 7 C	225
TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GGA 270 Phe Cys Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser H4-1BB RI TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTA AAG ACC GGG ACC TGT ASN Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC TGT CAT ASS CYS GIV Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GIV His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG CTG CTG GTG GAG GCA GCC CCT GTG GTG ACA TCG GGT TTC Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG CTG CTG CTG GTG GTG GAG GCA GCT TCC CTG CTG CTG CTG CTG CTG GTG GTG																225
Phe Cys Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GGT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 315 ACC ACG GAG CCA CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACG TCC TTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACG CTG ATC CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACG CTC CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACC CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT GTG ACC ACC CTG CTG CTG CTC CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT GTG	Cys A	sn I	те	Cys	Arg	vaı	Cys	Ald	GTA	туг	Pne	Arg	Pne	гуѕ	ьуѕ	
Phe Cys Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GGT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 315 ACC ACG GAG CCA CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACG TCC TTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACG CTG ATC CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACG CTC CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACC CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT GTG ACC ACC CTG CTG CTG CTC CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT GTG	•			•			•						_			
Phe Cys Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GGT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 315 ACC ACG GAG CCA CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACG TCC TTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG GCT TTG CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACG CTG ATC CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACG CTC CTG CTG CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG ACC ACC CTG CTG CTG CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT GTG ACC ACC CTG CTG CTG CTC CTG ATC TTC ATT ACT CTC CTG CTC CTG TTC TCT GTG	արարար ար	GC T	CC	тст	ACC	CAC	AAC	GCG	GAG	тст	GAG	TGC	АТТ	GAA	GGA	270
TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys Cag Gag CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC ACC ATT TCT GTG AAA ACC TGT AGC AAG Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser H4-1BB RI . TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC ATT Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG TCT TGT AGC ACC ACG AAC GGA AGG TCT GTG CGA CCC ACC ACC ACC ACC ACC ACC ACC AC																2,0
Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GGG TTG CTG CTG CTG GCC CTG ATC TTC ATT ACC TTG TTC TCT GTG GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG G360	10	•								•		• 1			<i>1</i>	
Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GGG TTG CTG CTG CTG GCC CTG ATC TTC ATT ACC TTG TTC TCT GTG GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG G360																
AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser H4-1BB RI . TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GGY His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG GCG CTG GCG GGA GAG GAA CCA GGA GCT TTC GTG GCT TTC TCT GTG GCG CTG GCG GC	TTC C	T TA	'GC	TTG	GGG	CCA	CAG	TGC	ACC	AGA	TGT	GAA	AAG	GAC	TGC	315
Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser . H4-1BB RI . TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	Phe H	is C	ys	Leu	Gly	Pro	Gln	Cys	Thr	Arg	Cys	Glu	Lys	Asp	Cys	
Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser . H4-1BB RI . TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630			•								•				•	
Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser . H4-1BB RI . TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630									~ ~ ~	~~~						0.50
TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630																360
TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GGY His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	Arg P	ro G	этА	GIN	GIU	ьeu	Thr	гÀг	GIN	GTÀ	Çys				Ser	
Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630											•	п4	LDD I	XI .		
Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro H4-1BB RII TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	ጥጥር ር	CA A	\sim	արար	ידעע	GAC	CAG	A A C	CGT	ΔСТ	GGC	GTC	тст	CGA	CCC	405
TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630																403
TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC A95 Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG GIY His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	Tien &	<u> </u>						11311	<u> </u>		CTY	VUL	Cyb	1119	110	
Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630													•			
ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	TGG A	CG A	AAC	TGC	TCT	CTA	GAC	GGA	AGG	TCT	GTG	CTT	AAG	ACC	GGG	450
Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	Trp T	hr A	\sn_	Cys	Ser	Leu	Asp	Gly	Arg	Ser	Val	Leu	Lys	Thr	Gly	
Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630				•												
Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630																
TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630																495
Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	Thr T	hr G	Slu	Lys	Asp	Val	Val	Cys	GTĀ	Pro	Pro	Val	Val	Ser	Phe	
Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630								•								
Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	ጥርጥ ር	CC 7	Cm	Λ CC	ACC.	<u>л</u> тт	ጥርጥ	GTG.	ΔСΨ	CCA	GAG	GGA	CCA	CCA	CCA	540
GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630																340
Gly His Ser Leu Gln <u>Val Leu Thr Leu Phe Leu Ala Leu Thr Ser</u> GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	OCI I	10 0	CL	1111			001	· u -			010	OT 1	011	110	O ± y	
Gly His Ser Leu Gln <u>Val Leu Thr Leu Phe Leu Ala Leu Thr Ser</u> GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630	GGG C	AC I	CC	TTG	CAG	GTC	CTT	ACC	TTG	TTC	CTG	GCG	CTG	ACA	TCG	585
GCT TTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630																
	_								_							
Ala Leu Leu Ala Leu Ile Phe Ile Thr Leu Leu Phe Ser Val																630
	<u>Ala L</u>	<u>eu I</u>	Leu	Leu	Ala	Leu	Ile	Phe	Ile	Thr	Leu	Leu	Phe	Ser	Val	

TITLE: NEW RECEPTOR AND RELATED PRODUCTS AND METHODS INVENTORS NAME: Byoung S. Kwon

SERIAL NO.: 08/955,572

2/6

			2/0	•		3	- To - S
CTC AAA TGC	o Ile Arg L	ys Lys Phe	Pro His	Ile Phe	Lys Gln	Pro	675 2
TTT AAG AAG Phe Lys Lys	G ACC ACT G s Thr Thr G	GA GCA GCT ly Ala Ala	CAA GAG Gln Glu	GAA GAT Glu Asp	GCT TGT Ala Cys	AGC Ser	<u>Um 7.20°</u>
TGC CGA TGT Cys Arg Cys							765
CTG TGA Leu							771
CACCATCCTG TCATCCTAGA CTAACATATT	TAGGAGATGT TGGAACAGCA TGATGTGTGG TGTCTTTACC AGTGTTTTGC	CAAGCAACC GCGCGCACC TTTTTTAAA	C CACCACO T CATCCA T CTTTTT	CCTG TTC AGTC TCT TTAA ATT	TTACACA TCTAACG TAAATTT		821 871 921 971 1021
GTGTGTGACA CCATAAGAAC ACGGAGACCT	CTCCTGATGC TGGAGTTATC GTCTTCTTAT	CTGAGGAGG GATGGCTGT TTTAACGTG	T CAGAAG. G AGCCGG GA CTGTAT	ACAA AGG NNNG ATA A <u>ATA AAA</u>	GTTGGTT GGTCGGG AAAAAT	• • •	1071 1121 1171
CTAAGAGGAA ATATGTATAT GTTACCAGGT	GAATTGTAGA TTGTTGATAC ATAAGACTCT CAATTTATT	GTAGTATAC TTTACTGTC GGACATTT	T GTATAT CA AAGTCA 'A CGTCAC	GTGT ATG ACCT AGA ACAC ACA	TATATGT GTGTCTG CACACAC	- -	1221 1271 1321 1371
TAATGGGATA GGTGACAGAC GTCTAAAACT	ACGTTTATAC GGGTAAAAGG TACCCCTTCT CCCCTTAGAA	AAACCAAAG GGGTACGTA GTCTCGTCA	A GTGAGT G GGACAG A GTTCCC	GATA TTA ACCT CCT GGAC GAA	TTGTGGA TCGGACT GAGGACA		1421 1471 1521 1571
TCGTGACACT AGGTCAGGTG	AGTCCGAAAA CCACCCTTG GTACCCGTCT TCGACTCACA	TGGACACTT GTAGGGGC	G AGTGTC GG GGAGAC	ATCC TTG AGAG CCG	CGCCGGA CGGGGGA		1621 1671 1721 1771
TTTAATCTCA TTATTACCTT GGTACTAATT	CAAGTTTCGT ATCCTGGCGC CTCCCTGCCG	CCGGGCTCG CAAGATAAA GCCCCCGTA	G CGGACC A CAACCA A GCATAA	TATG GCG AAAG CCT CGCG GCG	TCGATCC TGACTCC ATCTCCA	·	1821 1871 1921
TTACAAAAGT ATGGCAGCAT AATAAGGGTA	CTGGCCGCGT AATTAGTTCT CAAGGCTGGT CTGGGCGGCC	TGCTTTCAG ATTTGCTAG CGTCGAAGG	CC CTCCAA CG GCTGAC CC CCTTTG	GCTT CTG CGCT ACG GTTT CAG	CTAGTCT CCGCCGC AAACCCA		1971 2021 2071 2121
AGGCCCCCT	CATACCAAC	TTTCGACTT	T GATTCT	TGCC GGT	ACGTGGT		2171

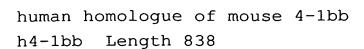


2205

GGTGGGTGCC TTAGCTCTTT CTCGATAGTT AGAC

TITLE: NEW RECEPTOR AND RELATED PRODUCTS AND METHODS INVENTORS NAME: Byoung S. Kwon SERIAL NO.: 08/955,572

3/6



1	AATCAGCTTT	GCTAGTATCA	TACCTGTGCC	AGATTTCATC	ATGGGAAACA
51	GCTGTTACAA	CATAGTAGCC	ACTCTGTTGC	TGGTCCTCAA	CTTTGAGAGG
101	ACAAGATCAT	TGCAGGATCC	TTGTAGTAAC	TGCCCAGCTG	GTACATTCTG
151	TGATAATAAC	AGGAATCAGA	TTTGCAGTCC	CTGTCCTCCA	AATAGTTTCT
201	CCAGCGCAGG	TGGACAAAGG	ACCTGTGACA	TATGCAGGCA	GTGTAAAGGT
251	GTTTTCAGGA	CCAGGAAGGA	GTGTTCCTCC	ACCAGCAATG	CAGAGTGTGA
301	CTGCACTCCA	GGGTTTCACT	GCCTGGGGGC	AGGATGCAGC	ATGTGTGAAC
351	AGGATTGTAA	ACAAGGTCAA	GAACTGACAA	AAAAAGGTTG	TAAAGACTGT
401	TGCTTTGGGA	CATTTAACGA	TCAGAAACGT	GGCATCTGTC	GACCCTGGAC
451	AAACTGTTCT	TTGGATGGAA	AGTCTGTGCT	TGTGAATGGG	ACGAAGGAGA
501	GGGACGTGGT	CTGTGGACCA	TCTCCAGCTG	ACCTCTCTCC	GGGAGCATCC
551	TCTGTGACCC	CGCCTGCCCC	TGCGAGAGAG	CCAGGACACT	CTCCGCAGAT
601	CATCTCCTTC	TTTCTTGCGC	TGACGTCGAC	TGCGTTGCTC	TTCCTGCTGT
651	TCTTCCTCAC	GCTCCGTTTC	TCTGTTGTTA	AACGGGGCAG	AAAGAAACTC
701	CTGTATATAT	TCAAACAACC	ATTTATGAGA	CCAGTACAAA	CTACTCAAGA
751	GGAAGATGGC	TGTAGCTGCC	GATTTCCAGA	AGAAGAAGAA	GGAGGATGTG
801	AACTGTGAAA	TGGAAGTCAA	TAGGGCTGTT	GGGACTTT	

Fig. 2A

1	MGNSCYNIVA	TLLLVLNFER	TRSLQDPCSN	CPAGTFCDNN	RNQICSPCPP
51	NSFSSAGGQR	TCDICRQCKG	VFRTRKECSS	TSNAECDCTP	GFHCLGAGCS
101	MCEODCKQGQ	ELTKKGCKDC	CFGTFNDQKR	GICRPWTNCS	LDGKSVLVNG
151	TKERDVVČGP	SPADLSPGAS	SVTPPAPARE	PGHSPQIISF	FLALTSTALL
201	FLLFFLTLRF	SVVKRGRKKL	LYIFKQPFMR	PVQTTQEEDG	CSCRFPEEEE
251	GGCEI.				

NEW RECEPTOR AND RELATED PRODUCTS AND METHODS INVENTORS NAME: Byoung S. Kwon TITLE:

SERIAL NO.:

08/955,572

4/6

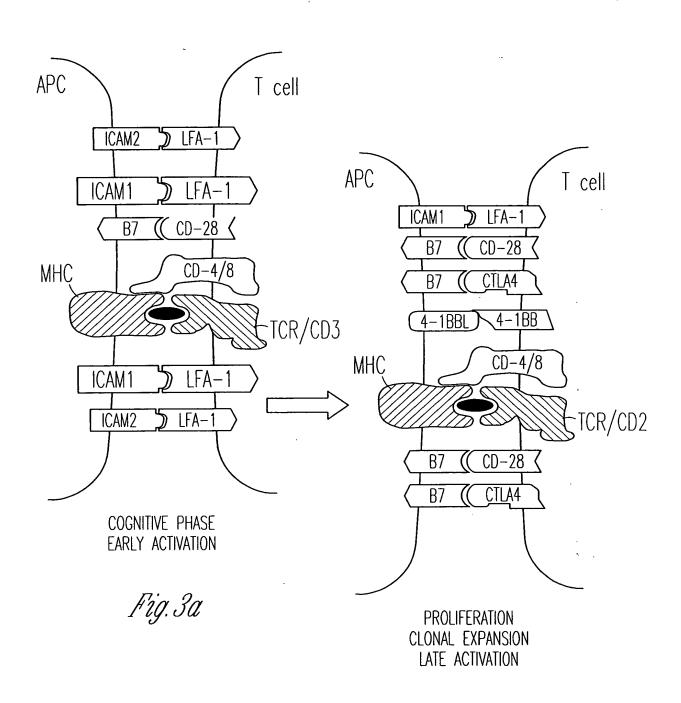


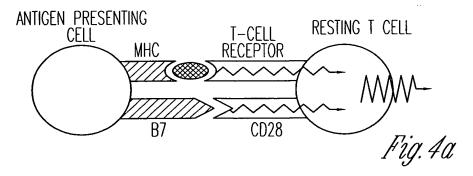
Fig. 3b

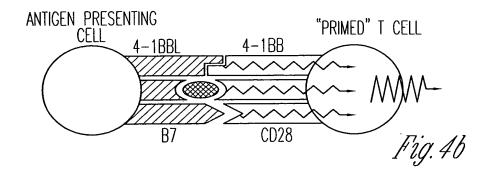
NEW RECEPTOR AND RELATED PRODUCTS AND METHODS INVENTORS NAME: Byoung S. Kwon

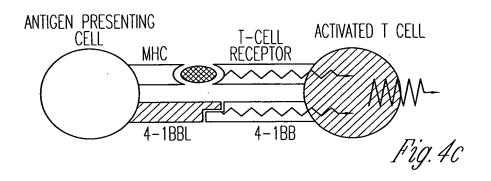
SERIAL NO.: 08/955,572

5/6

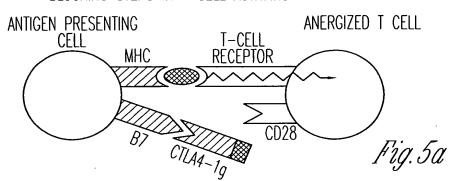
NORMAL T CELL ACTIVATION PATHWAY

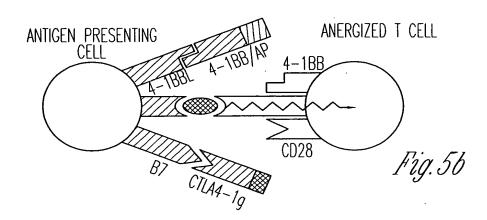


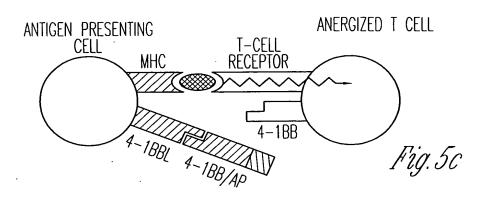




BLOCKING STEPS IN T-CELL ACTIVATION PATHWAY







Salar Same